

USSR

UDC 621.385.032.11 → 621.52

SOLOV'YEV, A.V., TEREENT'YEV, G.G., BRUK, S.G., LYTKIN, YU. V., YESIFANOV, V.N.,
RUDIN, G.A.

"On The Use Of Type 'NORD' Magnetodischarge Pumps For Evacuation Of Microwave
Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic
Technology. Scientific-Technical Collection. Technology And Organization Of
Production), 1970, Issue 5(37), pp 57-60 (from RZh--Elektronika i yeye primenen-
nye, No 2, February 1971, Abstract No 2A115)

Translation: Use of "NORD" magnetodischarge pumps with an evacuation rate of
25 and 100 l/sec in the production of microwave tubes makes it possible to in-
crease the average useful life of the devices and the rate of output of suitable
devices (by 5%) in comparison with that occurring with use of oil methods of
evacuation. A unique vacuum system of evacuation stations is created with ident-
ical rectifier blocks, equal dimensions of vacuum ducts and arrangement of the
manometer data units [датчик]. For stable operation of the magnetodischarge
pumps of the types indicated, it is necessary at monthly intervals to degas
them at a temperature of 300--350° C (the NORD-100 for 5 hours and the NORD-25
for 3--3.5 hours), and also reliably to guard against the entrance of oil from
the forevacuum pump. 2 ill. 1 tab. 3 ref. G.B.

1/1

USSR

UDC 541.13

SHTERMAN, V. S., GORDIYEVSKIY, A. V., FILIPPOV, E. L., and BRUK, S. V.,
Moscow Institute of Chemical Technology imeni D. I. Mendeleyev

"Study of Ion-exchange Membranes. V. Membrane Ion-exchange Electrodes in Nonaqueous Media"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 8, Aug 70, pp 2059-2060

Abstract: The authors studied the behavior of membrane ion-exchange electrodes in solutions of hydrogen chloride and trioctylamine chloride in dehydrated ethanol. The sensitive elements of the electrodes were cation-exchange membrane ankallit K-5 and anion-exchange membranes MA-100 and RMA-101. The results indicate that both cation-exchange and anion-exchange membrane electrodes can be used as indicator electrodes in media with average permittivity values. They should be pre-calibrated for precise electrochemical measurements. Cation-exchange membranes with strongly acidic functional groups display greater chemical activity in ethanol solutions than anion-exchange membranes containing tertiary and quaternary amino groups.

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- 23 -

Acc. Nr

AP0054653

Abstracting Service:

CHEMICAL ABST.

6-70 B

Ref. Code

UR 9055

113076j Continuous decomposition of soap in neutralized hydrogenated fat by citric acid in a cascade mixer. Ikhmo, N. P.; Bruk, T. M. (Zhir. Komb. Gomel, USSR). Maslo-Zhir. Prom. 1970, 36(1), 23-5 (Russ). A continuous cascade mixer—a glass pipe 2 m long, inside diam. 102 mm, placed at an angle of 30° under the overflow pipe of a neutralization vessel—was used for decompn. of excess soap by citric acid (I). Inside the glass pipe are 2 arms holding 20 stainless-steel barriers, which cover 90% of the pipe diam. A 5% soln. of I was dosed from a reservoir placed over the overflow pipe and equipped with a float and a capillary-ended siphon tube. The mixer has a capacity of $2.5-3.5 \times 10^3$ kg/hr of fat with a final soap concn. of 0.015-0.020% when a 5% excess of I at 90-5° is used.

M. Dokladal J

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REEL/FRAME
19831819

2CB

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UDC 547.436

KOSTYUKOVSKIY, Ya. L., BRUK, Yu. A., PAVLOVA, L. V., SLAVACHEVSKAYA, N. M.,
KOKUSHKINA, A. V., MIRKIN, B. S., BELEN'KAYA, I. A.

"Alkanethiols and Their Derivatives. I. Acid-Base Properties of N-Substituted β -Aminoalkanethiols"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 662-665

Abstract: The acid-base properties of a number of N-substituted β -amino-alkanethiols and some related compounds are studied under standard conditions to evaluate the effect of structural singularities of thiol on the acidity of the SH-group, and hence on sulfhydryl reactivity. The results of the studies show that increased acidity of the SH group is determined chiefly by the capacity of the given compounds to form a zwitter-ion structure, and to a lesser degree by the nature of the alkyl substituents associated with the nitrogen atom. The effect of alkyl substituents on the basicity of the amino group is not so clearly expressed as a consequence of other factors connected with the inductive effect.

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USSR

UDC 621.735.1:62-412:669.15

BRUK, YU. G., STANOVY, V. I., GUTOVSKIY, I. B., and PUGOVKIN, A. U.

"Investigation of Heating Steel NN3B (OKh18N5G12AB) Ingots"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 10, Oct 73, pp 39-40

Abstract: Steel NN3B can be greatly strengthened at 550-800° C and forged at 950-1250° C, but its deformability at higher temperatures is sharply diminished, and tests were conducted to determine the soak times and temperatures and heating rates to produce the highest forging temperature and best metal structure. Tests were made by heating at an arbitrary rate, soaking for a period, heating to a higher temperature at an arbitrary rate and soaking. The short coming of this method was that temperatures measured were furnace temperatures and not ingot temperature. Therefore, holes were drilled in test ingots for placement of thermocouples. Tests showed that at low furnace temperatures (650° C), the differences in furnace and ingot temperatures is high (200-350° C over a 7-hour period). At a furnace temperature of 1250° C this difference is only 60-80° C. When the temperature of the furnace was increased from 650-900° C the ingot temperature rise was much faster than at 650° C. Tests were also conducted for the fastest possible heating rates (400-500° C/hr) which showed that during

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USSR

BRUK, YU. G., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 10, Cc 73, pp 39-40

certain heating periods the temperature drop along ingot length was 650°C , which promoted development of numerous internal defects. The final conclusions for the heating of steel MN3B were to soak ingots at 650°C for 4.5 hours, 900°C for eight hours with final heating to a furnace temperature of 1300°C (ingot temperatures -- $1220\text{--}1240^{\circ}\text{C}$). This procedure increased the number of forging operations per heating, reduced the number of heatings, and reduced the number of cracks and scrap ingots by four times. Three figures, one bibliographic reference.

2/2

- 40 -

USSR

UDC 539.3.01

BRUKHANOVA, Ye. N.

"Thermal-Stress State of an Isotropic Plate With an Elastic Circular Opening"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov, Saratov University, 1972, pp 160-164 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V68)

Translation: The thermal-stressed state of an isotropic plate of complex configuration free from volumetric and surface loads that is weakened by a circular opening is considered. An elastic washer of the same thickness as the plate and made of another material is fastened into the opening with preliminary tightening. The washer and the external contour are maintained at constant but different temperatures. The small parameter method of expansion is used to determine the temperature and stress fields and as a result, the thermoelasticity problem for a plate of complex configuration with an elastic insertion reduces to a sequence of problems for a ring region. A square plate of steel into which a copper washer is welded without tightening is considered as an example. I. A. Motovilovets.

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SHEAR VISCOSITY OF A BINARY MIXTURE OF SIMPLE LIQUIDS -U-
AUTHOR--(04)-BRUKLEVINSON, E.T., VIKHRENKO, V.S., NEMTSOV, V.B., ROTT, L.A.
COUNTRY OF INFO--USSR *B*
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 70-5
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--FLUID VISCOSITY, BINARY FLUID SYSTEM, TENSOR ANALYSIS, SHEAR
MODULUS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0196 STEP NO--UR/0139/70/013/002/0070/0075
CIRC ACCESSION NO--AT0105272
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0105272

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE BINARY MIXT. OF THE SIMPLE LIQS. THE TENSOR OF THE VISCOSITY FACTORS IS GIVEN AND THE RELATION BETWEEN THE SHEAR VISCOSITY FACTOR AND THE LIMITING VALUE OF THE SHEAR MODULUS FOR THE SIMPLE LIQ. MIXT. IS DERIVED. FACILITY:
BELGRUSS. TEKHNOLOG. INST. IM. KIROVA, MINSK, USSR.

UNCLASSIFIED

USSR

UDC 591.18:577.37:597.21

BRUKMOZER, P. and DOBRYLKO, A. K., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Evoked Potential in the Telencephalon of the Lamprey *Lampetra fluviatilis* After Stimulation of the Olfactory Nerve"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 5, 1972, pp 558-560

Abstract: Potentials recorded from the surface of the olfactory bulb of lampreys after stimulation of the olfactory nerve with microelectrodes filled with KCl had a latent period of about 10 msec and consisted of 4 components: (i) rapid, most pronounced in the rostral sections; (ii) small 2- or 3-phase wave preceding the main negative components of the potential; (iii) main negative wave; (iv) positive wave immediately following the negative wave. Evoked potentials from the olfactory lobe were in the form of a negative wave generally followed by a positive phase. Potentials on the surface of the primordial hippocampus had negative polarity and consisted of rapid primary and slow secondary components, usually with considerable amplitude. The results of the study indicate that olfactory potentials in lampreys are similar to those of the olfactory bulb in more highly organized vertebrates and this is thus the

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USSR

BRUKMOZER, P. AND DOBRYLKO, A. K., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 5, 1972, pp 558-560

primary center of olfaction. On the other hand, the above-lying structure, the olfactory lobe, is still very primitively organized. And, judging by the distinct electrical responses, the lamprey primordial hippocampus also performs important olfactory functions.

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- 53 -

1/2 033 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ULTRAVIOLET FLUORESCENCE OF BIOLOGICAL OBJECTS EXPOSED TO IONIZING
RADIATION EFFECTS -U-
AUTHOR--(05)-ALEKSANDROV, S.N., BRUMBERG, I.YE., VOROBTSOVA, I.YE.,
KONDRATYEVA, T.M., SAFRONOVA, V.G.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESKAYA BIOLOGIYA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.
66-72
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CANCER, RADIATION BIOLOGIC EFFECT, CELL PHYSIOLOGY, UV
IRRADIATION, FLUORESCENCE, TISSUE TRANSPLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1967

STEP NO--UR/0453/70/004/000/0066/0072

CIRC ACCESSION NO--AP0120619

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF THE HEREDITARY UV LUMINESCENCE OF CANCEROUS CELLS OF MICE AND LYMPHOSARCOMATOUS CELLS OF RATS TRANSPLANTED TO NONIRRADIATED ANIMALS AFTER EXPOSURE TO A 500 R DOSE OF IONIZING RADIATION. IT IS FOUND THAT THE DAUGHTER CELLS PRODUCED BY SUCH TRANSPLANTED CELLS RETAINED THE FLUORESCENT PROPERTIES OF THEIR PARENT CELLS AND PASSED ON THESE PROPERTIES TO THEIR OFFSPRING DURING THE MULTIPLICATION IN NONIRRADIATED ORGANISMS. THE HEREDITARY TRANSMISSION OF RADIATION INDUCED CHANGES IN THE MYELOCYTES, METAMYELOCYTES AND SEGMENTAL NUCLEUS NEUTROPHILS OF IRRADIATED RATS IS ALSO DEMONSTRATED. THE VARIOUS TYPES OF RADIATION DAMAGE LEADING TO THE INTENSIFICATION OF UV FLUORESCENCE IN IRRADIATED CELLS ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 612.8.015

BRUMBERG, V. A., I. P. Pavlov Institute of Physiology, USSR Academy of Sciences, Leningrad

"Effect of Histotoxic Hypoxia on the Activity of Isoenzymes of Lactic Acid Dehydrogenase in Neurons and Neuroglia of Different Divisions of the Central Nervous System"

Moscow, Doklady Akademii nauk SSSR, No 2, 1973, pp 470-473

Abstract: The total activity of lactic acid dehydrogenase (LAD) and individual components of the enzyme was studied in neurons and neuroglia from the cerebellar cortex, anterior horns of the spinal cord, and spinal ganglia of rats after they were injected intraperitoneally with KCN solution to induce histotoxic hypoxia. The quantitative correlation of the rapidly and slowly migrating components of LAD in the neurons was found to be practically the same as in the corresponding glial satellite cells, but it varied in the different regions investigated. In the motor neurons of the anterior horns of the spinal cord and in the sensory neurons of the spinal ganglia, histotoxic hypoxia activated only the slowly migrating form of the enzyme (S-LAD) (more active under anaerobic conditions), but had no

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USSR

BRUMBERG, V. A., Doklady Akademii nauk SSSR, No 2, 1973, pp 470-473

effect on the neuroglial cells surrounding these neurons. Hypoxia activated only the rapidly migrating form of LAD (more active under aerobic conditions) in the Purkinje cells of the cerebellum but both forms in the glial satellite cells.

2/2

- 69 -

USSR

UDC 591.152:612.8.015

BRUMBERG, V. A., GAZENKO, O. G., Corresponding Member of the USSR Academy of Sciences, DEMIN, N. N., MALKIN, V. B., NEVZNER, L. Z., Physiology Institute imeni I. P. Pavlov of the USSR Academy of Sciences, Leningrad

"Topochemical Differences in the DNA Content in the Motoneurons of the Spinal Cord in the Case of Hypoxia and Hypokinesia"

Moscow, Doklady Akademii nauk SSSR, 1972, Vol 205, No 6, pp 1490-1493

Abstract: The reactions of the motoneurons of the cervical and lumbar enlargements of the spinal cord, that is, neurons which are similar morphologically and with respect to the neuromediator participating in their functional activity but different with respect to the group of muscles innervated by them, to hypoxia and hypokinesia were compared. A highly important fact in the experiments is that the motoneurons of the cervical enlargement innervate the diaphragm and the musculus intercostalis which play a significant role in the regulation of the respiration. Hyperventilation during hypoxia and some reduction in ventilation during hypokinesia essentially distinguish these two states. The experiment was performed on mature white male rats weighing 100 ± 20 grams divided into four groups: 1) one group in a pressure chamber at an "altitude" of 3,000 meters initially and then daily for 7 days raised by 500 to 1,000 meters and then held for 14 days at an "altitude" of 7,000 meters with daily $1/2$

USSR

BRUNBERG, V. A., et al., Doklady Akademii nauk SSSR, 1972, Vol 205, No 6, pp 1490-1493

exposure for 6 hours under rarefied atmospheric conditions; 2) a second group subjected to prolonged forced hypokinesis by placing them for 20 days in small pencil-box cells significantly limiting the possible movements; 3) a third group subjected to the combined effect of hypoxia and hypokinesis for which the animals enclosed in the pen-box cells were placed in the pressure chamber and held under the same hypoxia conditions as the rats in the first group. There was a fourth control group. The decapitation and preparation procedures are described, and data are tabulated on the concentration of cytoplasmic DNA, the volume of cytoplasm and the absolute amount of cytoplasmic DNA in the motoneurons of the anterior horns of the cervical and lumbar enlargements of the spinal column in the presence of hypoxia and hypokinesis. The data indicate different natures of the hypoxic and hypokinetic forms of stress. Hypoxia affects primarily the group of motoneurons which innervates the respiratory musculature, and hypokinesis, and musculature innervating the lower extremities. Neither effect changes the amount of DNA in the neurons of the first group but they both have a similar effect (an increase) on the amount of DNA in the neurons of the second group. An explanation of the possible mechanism of these effects is given.

2/2

- 51 -

Precision Mechanical and Optical

USSR

UDC 535.822.2

BRUMBERG, Ye. M., Doctor of Sciences, YAKUBENAS, V. A. A., Candidate of Sciences

"Contact Microscopy in Reflected Light"

Optiko Mekhanicheskaya Promyshlennost', No 12, 1972, pp 27-30.

Abstract: A method is described for contact microscopy in reflected light. Various methods of illumination of total biological preparates are studied when this method is used. This is essentially a new type of microscopy, requiring the development of special apparatus and methods of preparation of the objects to be studied, including living biological specimens. In many cases, the method can be used as an independent, simple method of investigation of pathological-anatomical material. The device allowing contact microscopy in reflected light can be made by construction of a simple addition to an ordinary microscope using a low-power incandescent bulb as the light source. The method eliminates the need for microtones, material freezing systems, reduces the need for reagents and eliminates the necessity of a laboratory assistant.

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USSR

UDC: 669.15:621.785

BERNSHTEYN, M. L., BRUN, L. YA., ZAVISOVSKIY, V. A., SAVARI, P. and
SAMEDOV, O. V., Moscow Institute of Steel and Alloys

"Inheriting the Thermomechanical Strengthening of 30Kh2G2T Steel"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 32, No 4, Oct 71,
pp 813-818

Abstract: Described is a study of the mechanical properties of 30Kh2G2T steel quenched and tempered following preliminary high-temperature strain hardening with heating the deformed austenite as supercooled. It is shown that repeated quenching following high-temperature mechanical treatment facilitates the inheritance of high mechanical properties. The restoration of the higher properties is the more complete the longer the heating duration of the hot-deformed austenite in the bainite region. The maximum effect is observed when the high-temperature thermomechanical treatment is followed by isothermal decay. The effect of "inheritance" is also observed during repeated quenching following low-temperature thermomechanical treatment with isothermal decay of austenite. The nature of this phenomenon is discussed with regard to the metallographic analysis of the initial austenite grain

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BERSHTEYN, M. L., et al, Fizika metallov i metallovedeniye, Vol 32, No 4,
Oct 71, pp 813-818

in which picric acid has failed to produce an unambiguous etching pattern
and has most likely revealed, in addition to large-angle grain boundaries,
the boundaries of a substructure. (6 illustrations, 5 bibliographic references)

2/2

- 29 -

USSR

UDC 669.295:539.214

PERTSOVSKIY, N. Z., SHAKHANOVA, G. V., and BRUN, M. YA., All Union Institute of Light Alloys

"Features of Deformation and Ductility of Two-Phase Titanium Alloys with a Lamellar Structure"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 154-161

abstract: Microstructural features of deformation in (alpha+beta)-titanium alloys with a lamellar structure were investigated in relation to size of the alpha-colonies. Samples of VT3-1 alloy (5.7 Ti, 2.5 Al, 1.7 Cr, and 0.5 Fe) were subjected to pressure treatment by different modes. All samples were annealed by conventional means for this alloy: heated to 870°C for one hour, transferred to a furnace at 650°C for two hours, cooled in air. The microstructural components were measured (initial beta-grain size -- D, Alpha-colony size -- d, alpha-plate thickness -- b) and compared. Five different plate structures were found and it was noted that the larger the initial beta-grain size (D) the greater the tensile strength of the plate provided plate thickness is quite thin (b = 0.5-1.0 microns). At the same time ductility is lost (drops from 17.8 to 3.1%) and reduction in area drops off rapidly. Thus, 1/2

- 55 -

USSR

PERTSCOVSKIY, N. Z., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 154-161

optimum properties of good strength and ductility are achieved with small D, moderate size for d and relatively large b. Similar results were produced during investigations of alloys VT9, VT22 and a number of other alloys with a lamellar structure. Five figures, one table, four bibliographic references.

2/2

USSR

UDC 669.295.6:621.789

BRUN, M. Ya., VILS

"Studies of the Efficiency of Various Methods of Thermomechanical Hardening of $\alpha+\beta$ Titanium Alloys"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 5, 1972, pp 138-141

Abstract: A study was made on the effects of preliminary thermomechanical treatment (PTMT) and low-temperature thermomechanical treatment (LTMT) methods on the structure and mechanical properties of VTZ-1 titanium alloy, which is a typical two-phase titanium alloy. The LTMT investigation schema consisted in cold and hot rolling of preliminarily hardened sheet samples. The mechanical properties of the VTZ-1 alloy after LTMT, PTMT, and after aging are discussed by reference to diagrams and microstructures after TMT by different methods and after aging. The experimental data show that each TMT method can be applied to increase the strength of semifinished goods of $\alpha+\beta$ titanium alloys. The discussed methods of TMT are inferior to high-temperature TMT in their optimum conditions. However, they can be used for strengthening thin sheets, thin-walled tubes, wires, and other semifinished goods in the production of which high-temperature TMT is unsuitable. Five figures, two tables, three bibliographic references. •

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- 80 -

USSR

UDC 539.4.669.017

BRUN, M. YA., KUDRYASHOV, V. G., and BYKOVA, L. A., Moscow

"Effect of Structure on the Tendency of VT9 Titanium Alloy Toward Brittle Fracture"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul/Aug 72, pp 74-79

Abstract: Results are presented from an investigation of the effect of the α and β structure of VT9 titanium alloy on a series of criteria characterizing the strength by the onset and the propagation of fractures at room temperature. The plastic and brittle yield points were determined during the application of a double shock load and during the static deflection of the samples by recording the dynamic deformation. The parameters measured included actual tensile strength (S_k), temporary resistance (σ_e) and resistance to small plastic deformation ($\sigma_{0.001}$, $\sigma_{0.01}$, $\sigma_{0.1}$), modulus of deformational hardening ($D = d\sigma/d\delta$), comparative extension (δ), comparative cross-sectional constriction (ψ), and uniform and localized constriction (ψ_u and ψ_l). Significant differences were observed between fine-grained and coarse-grained samples.

1/1

- 56 -

USSR

UDC 669.295:539.214

PERTSOVSKIY, N. Z., SHAKHANOVA, G. V., BRUN, M. YA., and NOTKIN, A. B.,
All-Union Institute of Light Metals

"On the Influence of the β -Phase on the Plasticity of Two-Phase Titanium Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72,
pp 887-890

Abstract: The influence of the β -phase on the microstructural deformation of titanium alloys was investigated on hot-rolled bars of VT9 alloys possessing a grained and lamellar α -phase and an initial fine fibrous structure, very similar to the structure of the previously (Ibid., Vol 30, 1970, p 1047) investigated VTZ-1 alloy. The results of mechanical investigations of both alloys, containing 15-20% of β -phase in the annealed state, are discussed by reference to tabulated data and microstructural deformation pictures of the VT9 alloy. The sharply decreased plasticity of the VT9 alloy in comparison with the VTZ-1 alloy explains the observed plasticity decrease by other authors of two-phase titanium alloys with lamellar-type structure with increased content of stabilizers. The presence of the β -phase increases
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- 53 -

USSR

PERTSOVSKIY, N. Z., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 887-890

the microinhomogeneity of deformation regardless of the type of the structure, contributing to a plasticity decrease of two-phase titanium alloys at room temperature. Two illustrations, one table, three bibliographic references.

2/2

Thermomechanical Treatment

USSR

UDC 669.295:620.1

BRUN, M. Ya.

"The Effect of Phase Conditions on Thermomechanical Strain Hardening of $(\alpha + \beta)$ -Titanium Alloys"

Moscow, Tsvetnyye Metally, No 12, Dec 71, pp 53-56

Abstract: An experimental study was made of the effect of phase conditions on thermomechanical strain hardening of $(\alpha + \beta)$ -titanium alloys with 3% Mo and 6.5% Mo and industrial titanium alloys VT5-1, OT-4, VT3-1, and TV-9 with polymorphic conversion temperatures of 880, 860, 990, 930, 960, and 990°C, respectively. The strength increase by HTMT of $(\alpha + \beta)$ -titanium alloys is shown to be a function of the quantity of residual β -phase after HTMT. As a strain-hardening treatment, HTMT is most expeditious for medium-and-high-alloyed $(\alpha + \beta)$ -alloys, but it can be useful also for α -alloys, particularly for plasticity increase by deformations at temperatures of the β -zone. Five illustr., two tables, three biblio. refs.

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Titanium

USSR

UDC 536.425

PERTSOVSKIY, N. Z., BRUN, M. Ya., and SHAKHANOVA, G. V., All-Union Institute of Light Alloys

"Nature of Embrittlement of Two-Phase Titanium Alloys With Large Plate Structure"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 1047-1054

Abstract: The microstructural peculiarities of the processes of deformation and rupture of standard VTZ-1 ($\alpha + \beta$)-titanium alloy were studied with various types of initial structure. It was established that the basic reason for the decreased plasticity of two-phase alloys with large plate structure in comparison with fine grained equiaxial structure, regardless of the phase composition, is the "coarse" slippage arising as a result of inheritance of the structure of the high-temperature β -phase.

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Acc. Nr:

AP0048344

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR 0065

102169r Separation of heterogeneous particles in a fluidized bed. Khotomlyanskii, L. N.; Brun-Tsekhovoi, A. R.; Katsobashvili, Ya. R.; Petrov, V. N.; Skobin, A. I. (MINKh GP, Moscow, USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 13-17 (Russ). The app. included 2 interchangeable glass columns of 78 and 147-mm inside diam. with gas-distribution grids of 68 and 105 mm diam., resp. and orifices of 0.8 mm; their free surfaces amounted to 3.8%. River sand as the heavy phase and heat carrier and Al silicate, on which metallic Ni was pptd. as the catalyst, had 0.63-0.85 and 0.25-0.315-mm grain size and d. of 2.65 and 1.30 g/cm³, resp. The height of the 2 beds varied from 70 to 100 and 130 to 190 mm, resp., according to the air velocity variation from 0.218 to 0.435 m/sec. The beds obtained in the reactor models had 5 zones differing in their compn. and structure and the sepn. mechanism occurring in them. The upper zone, contg. 80-98% of the catalyst, was the greater and the heat carrier settled. The 2nd zone contained <1% of the catalyst. In the 3rd zone above the grid, the catalyst concn decreased slowly. In the 4th zone at the level of the grid, the catalyst concn. decreased somewhat more intensively.

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The lower zone below the grid, with higher flow velocity, was the venting zone. The field of the concns. depended on the filtration velocity, height of the moving heat-carrier bed, and fluidization coeff. of the latter. The sepn. of the catalyst particles depended significantly on the entrainment of the heat-carrier bed by the gas stream. A high sepn. of the catalyst was obtained up to a concn. of 0.001%. The exptl. app. and results are presented graphically.

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USSR

UDC 621.777.07

GUN, G. Ya., POLUKHIN, P. I., YAKOVLEV, V. I., GOLOVINOV, M. F., PRUDKAVSKIY, B. A., KORSETSKIY, G. M., RYZHOV, A. F., and BRUNILIN, A. I.

"Optimal Die Designing for Pressing Aluminum Alloys"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 139-199

Translation: Questions of optimal die designing are considered using a computer. On the basis of statistical processing of a number of existing dies and theoretical and experimental research, a method is proposed for calculating the working belts and location of the center of gravity of a section on the die. Five figures and three tables.

1/1

- 29 -

USSR

MARADUDINA, N. V., and BRUNNEK, N. I.

Bystrozamorozhennyye Kulinarnyye Izdeliya i Tekhnologiya Ikh Ispol'zovaniya
(Quick-Frozen Foods and Technology for Using Them), Moscow, "Ekonomika,"
1972, 64 pp

Translation: Annotation: The purpose of the brochure is to acquaint public catering workers with certain problems of organizing the production of quick-frozen foods in the Soviet Union and abroad.

The reader will become acquainted with the technology for producing quick-frozen dishes, culinary items, and semifinished articles, and conditions for defrosting, storing, and heating them as developed by the following scientific research institutes: VNIKOP [All Union Scientific Research Institute of the Canning and Dehydrated Vegetable Industry], VNIKhI [All Union Scientific Research Institute of the Refrigeration Industry], VNIIMP [All Union Scientific Research Institute of the Meat Industry], and NIITOP [Scientific Research Institute of Trade and Public Catering].

The brochure is designed for production experts and cooks at public catering enterprises.
1/4

- 75 -

USSR

MARADUDINA, N. V., and BRUNNEK, N. I., Bystrozamorozhennyye Kulinaryye Izdeliya i Tekhnologiya Ikh Ispol'zovaniya, Moscow, "Ekonomika," 1972, 64 pp

The author of sections I-VI is N. V. Maradudina, senior engineer at VNIKhI, while sections VII-IX were written by N. I. Brunnek, senior scientific associate at NIITOP.

Table of Contents:

	Page
I. Production of Quick-Frozen Foods in the USSR	3
II. Preparation of Quick-Frozen Cooked Dishes	5
Salads	5
First Courses	6
Second Courses	13
Beef Goulash	15
Stewed Beef	16
Meatballs With Onion in Red Sauce	17
Pork Ragout	17
Boiled Tongue With Vegetables in White Sauce	18
Kidneys in Red Sauce	19
Minced Steak	19
Roast Beef	

2/4

USSR

MARADUDINA, N. V., and BRUNNEK, N. I., Bystrozamorozhennyye Kulinarneye Izdeliya i Tekhnologiya Ikh Ispol'zovaniya, Moscow, "Ekonomika," 1972, 64 pp

	Page
III. Preparation of Semifinished Foods	23
Fresh Vegetables	23
Semifinished Vegetable Products	24
Blanched Vegetable	24
Sauteed Vegetables	25
Borsch Ingredients	25
Soup Ingredients	25
Greens	25
Potato Cutlets	26
Half-Browned Potatoes	26
Semifinished Meat Products	26
Meat Pel'meni	27
Quenelles	27
Semifinished Foods from Curds	27
Vareniki [curd or fruit dumpling]	27
Fruits and Berries	27
IV. Freezing and Packing	29
V. Storage and Transportation	33

3/4

- 76 -

USSR

MARADUDINA, N. V., and BRUNNEK, N. I., Bystrozamorozhennyye Kulinarneye Izdeliya i Tekhnologiya Ikh Ispol'zovaniya, Moscow, "Ekonomika," 1972, 64 pp

	Page
VI. Production of Quick-Frozen Cooked Dishes Abroad	35
VII. The Use of Quick-Frozen Dishes at Public Catering Enterprises	42
Heating First Courses	42
Heating Second Courses	43
Meat Dishes	43
Dishes and Side Vegetables	44
Side Dishes of Groats	44
Blinchiki [small pancakes] with Various Stuffings,	
Cold and Baked Puddings	44
Microwave Heating	47
Rules of Work on the Volzhanka Super High Frequency	
Device	50
Safety Rules	51
VIII. Requirements for Quality of and Laying Out Heated Dishes	51
IX. Model Daily Diets	54

4/4

USSR

UDC 541.133.24

VAYSEBERG, E. S., YAKHONTOVA, L. F., and BRUNS, B. P., All-Union Scientific Research Institute of Antibiotics

"Ion Exchange Kinetics of Large Organic Ions on Carboxylic Cationites. V. Resilient Properties of Cations with Different Degree of Substitution of Inorganic Sodium Anti-ions by the Streptomycin Ions"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 9, Sep 70, pp 2361-2363

Abstract: Resilient properties of the grains of Zerolite 226 cationite were studied under conditions of different degree of crosslinking of the sorbent as related to the ionite's content of organic anti-ions and temperature. With transition of the carboxyl cation from the sodium form to the organic form, the grain resilience decreases but only when the sorbent has a specific degree of crosslinking. Lower resilience of the ionite grains is evidently due to the fact that the triple charge streptomycin ions act in a way as an additional cross-linkage.

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1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--AN ION EXCHANGE METHOD FOR ISOLATION OF CRYSTALLINE D CYCLOSERIN
FROM FERMENTATION BROTH FILTRATES -U-
AUTHOR--(04)--YAKHONTIVA, L.F., BRUNS, B.P., KOBZITEVA, S.N., PEREVOZSKAYA,
N.A.
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 411-415
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ION EXCHANGE RESIN, FERMENTATION, CYCLOSERINE, CHEMICAL
SEPARATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1140 STEP NO--UR/0297/70/015/005/0411/0415
CIRC ACCESSION NO--AP0115159
UNCLASSIFIED

2/2 010
CIRC ACCESSION NO--AP0115159

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION EXCHANGE METHOD FOR ISOLATION OF CRYSTALLINE D CYCLOSERIN FROM FERMENTATION BROTH FILTRATES IS DESCRIBED. THE METHOD INCLUDES SORPTION OF CYCLOSERIN IN THE CATIONIC FORM BY A STRONG CROSS LINKED SULFOCATION EXCHANGE RESIN (ON THE BASIS OF STYRENE AND DIVINYLBENZOL) IN A SERIES OF COLUMNS. AN AQUEOUS AMMONIA SOLUTION IS USED FOR DESORPTION. CYCLOSERIN IN CRYSTALLIZED FROM ELUATES AFTER THEIR CLARIFICATION, EVAPORATION AND DILUTION OF THE CONCENTRATE WITH ETHYL ALCOHOL. A PRODUCT OF HIGH PURITY IS OBTAINED. FACILITY: NATIONAL INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELIMINATION OF CERTAIN ADMIXTURES IN THE PROCESS OF ISOLATION AND
CHEMICAL PURIFICATION OF STREPTOMYCIN -U-
AUTHOR-(04)-BOGATSKIY, M.A., VISHNEVSKIY, V.M., YAKHONTOVA, L.F., BRUNS,
B.P.
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 406-411
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STREPTOMYCIN, CHEMICAL PURIFICATION, FERMENTATION, CATION
EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/0154 STEP NO--UR/0297/70/015/005/0406/0411
CIRC ACCESSION NO--AP0114550
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114550

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF ELIMINATION OF CERTAIN ADMIXTURES, SUCH AS MAGNESIUM, STREPTIDINE AND STREPTOBIOZAMINE PRESENT IN STREPTOMYCIN FERMENTATION BROTH FILTRATES DURING THE ANTIBIOTIC SORPTION BY CARBOXYLIC CATION EXCHANGE RESINS WAS STUDIED. IT WAS SHOWN THAT THE EFFICACY OF ELIMINATION OF THE ADMIXTURES SORBED BY THE RESINS DEPENDED ON THE SOLUTION COMPOSITION USED FOR THEIR SORPTION. THE STAGE OF THE ADMIXTURE SORPTION WAS IMPROVED. FACILITY: KIEV PLANT OF MEDICAL PREPARATIONS, NATIONAL INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

USSR

UDC: 622.232.5:622.234.5

KUZ'MICH, I. A. and BRUNS, S. A.

"Maximum Area of a Slit Formed by Water Jets in a Mountain Massif"

Moscow, Doklady Akademii nauk SSSR, vol 204, No 6, 1972, pp 1341-1342

Abstract: It has been established by experimental research on the destruction of rock by water jets that the side surface of the eroded slit or fissure increases per unit time as a function of the displacement velocity of the jet, with the hydrodynamic parameters constant, until it reaches a particular point. It then begins to fall off. Since this dependence has not as yet received a clear mathematical statement, the purpose of this article is to determine the displacement velocity corresponding to the maximum increase in side surface of the slit per unit time, and the function of this determination is to verify conclusions theoretically reached by the authors in an earlier paper in this same journal (204, No 5, 1972). A table is given of displacement velocities corresponding to various types of rock. The authors are connected with the A. A. Skochinskiy Mining Institute.

1/1

- 74 -

USSR

UDC: 681.326

(2)

KUZNETSOV, V. A., KONTORER, V. G., TARANENKO, V. A., YAMPOL'SKIY, L. S.,
BRUNSHTEYN, Yu. G., KARLOV, A. G.

"A Digital Device for Measurement of Linear Displacements"

Kiev, Mekahnizatsiya i Avtomatizatsiya Upravleniya, No 2, Mar-Apr 73, pp 68-70.

Abstract: The Sevastopol' Instrument Building Institute has developed a device for measurement of linear displacements with output of the results of measurement in digital form. The device consists of a feeler threaded to mate with a revolving driver. As the driver turns to displace the feeler, the number of revolutions of the driver is sensed by counting the number of cycles of changing voltage in the circuit of a coil attached to the driver. The device can measure linear distances with an accuracy of ± 0.05 mm.

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- 21 -

1/2 037 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MODEL OF A REACTOR-SEPARATOR FOR FLUIDIZED-BED PROCESSES WITH A
SEPARABLE HEAT-TRANSFER AGENT -U-
AUTHOR-(03)-BRUNTSEKHOVCI, A.R., KATSOBASHVILI, YA.R., YEVREYNDY, A.N.
COUNTRY OF INFO--USSR *B*
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 53-5
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--MODEL, FLUIDIZED BED, CHEMICAL SEPERATION, INDUSTRIAL
PRODUCTION, HYDROGEN, CATALYST, HEAT TRANSFER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/2047

STEP NO--UR/0064/70/046/001/0053/0055

CIRC ACCESSION NO--AP0109979

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109979

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A FLUIDIZED BED REACTOR SEPARATOR FOR THE PRODUCTION OF H SUB2 BY CONVERSION OF HYDROCARBON GASES (B.-T., ET AL., 1964), THE CATALYST CONCN. AT THE OUTLET OF THE APP. 1ST DECREASED AND THEN INCREASED WITH INCREASING GAS VELOCITY, W, IN THE COLUMN; THE MIN. IN CATALYST CONCN. CORRESPONDED TO W OF THE ORDER OF 0.30-0.35 M, SEC, BUT ITS EXACT VALUE DEPENDED ON THE GAS VELOCITY IN THE BLOWING ZONE OF THE APP. THE FREE CROSS SECTION OF THE TRAYS HAD LITTLE EFFECT ON THE CATALYST CONCN. AT THE OUTLET AND ON THE DETREE OF SEPN., PROVIDED THAT THE HOLE DIAM. WAS LESS THAN OR EQUAL TO 1.2 MM. AN EQUATION FOR THE CALCN. OF THE MIN. CATALYST CONCN. IN THE GAS IS PROPOSED.

UNCLASSIFIED

USSR

UDC 621.311.6

ARTAMONOV, S.F., BRUS, V.I., SHMOYLOV, N.F.

"On The Design Of Rectifiers Dependable With Respect To Gradual Breakdowns"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports Of The All-Union Scientific-Technical Conference On Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 144-146 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B479)

Translation: A method is developed for analysis of a rectifier which is regulated with the help of a transistorized regulator. The method involves the distribution of each parameter affecting a breakdown into two parameters of a lower degree, down to the primary parameters of the components. Use at each degree of only two parameters makes it possible during theoretical and experimental investigation to employ the method of spacing of parameters. 2 ref. I.A.

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USSR

UDC 669.71.48

BRUSAKOV, YU. I., SIROTKIN, N. N., RZHAVIN, S. A., AVDEYEV, M. P., ALIVOVODICH, M. KH., KUCHERENKO, A. G.

"Processing Metal-Containing Slags in the Production of Silicon Aluminate Alloys"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrod. prom-sti
(Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 177-183 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G197)

Translation: Test results with respect to ore recovery processing of metal slags formed when obtaining and defining aluminum alloys with silicon are discussed. The technical possibility and expediency of recovery of crushed slags in the indicated alloy production process are confirmed. The specific consumption indexes of the alloys in large 120 and 16,500 kilowatt-ampere laboratory and industrial furnaces are presented. The extraction of alloy from the slags exceeded the content of metal phase in them. This indicates additional extraction of metal from the carbides and oxides contained in the slags in the amount of up to 55% in a large laboratory furnace and 27% in an industrial furnaces. There are 5 tables.

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- 22 -

USSR

UDC 669.71'782.046(088.8)

ZHEREBNOY, I. A., GUZ', D. S., AVDEYEV, M. P., and BRUSAKOV, Yu. I.

"Method of Charge Pelletizing"

USSR Author's Certificate No 267913, Filed 28/03/68, Published 24/07/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G163 P)

Translation: A method of charge pelletizing by moistening, mixing with a binder, forming, and drying is presented. To produce pellets with high porosity, the initial charge is moisturized to 18-30%, and drying is performed at 170-200°.

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USSR

UDC 613.1:551.581(213)]-07:612.111

BRUSENTSEV, K. I., Surgical Department, Clinical Basin Hospital, Vladivostok

"Changes in Some Red Blood Cell Indexes in Sailors During a Long Tropical Cruise"

Moscow, Sovetskaya Meditsina, No 12, 1970, pp 56-58

Abstract: The hemoglobin concentration and erythrocyte count were studied dynamically in 40 persons on board the research vessel Vityaz' 2 days after it left Vladivostok in December (where the temperature dropped at night to -18°) and once a month for 6 months after it reached the Indian Ocean. As the temperature and relative humidity rose, the average hemoglobin concentration in the males increased in April by 14%, while the number of RBC cells increased by 25%. The same changes were found in the females (9 and 16%, respectively). Then, despite a further rise in temperature and humidity, the two indexes slowly dropped, but not to original levels, presumably because of adaptation to the tropical climate. The same pattern was observed in those who had previously spent some time in the tropics, i.e., an initial increase in the amount of hemoglobin and RBC followed by a gradual decrease.

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- 43 -

USSR

UDC 539.16:628,315

DOLIN, P. I., Doctor of Chemical Sciences; SHUBIN, V. I., and BRUSENTSEVA, S. A., Candidate of Chemical Sciences; and PRIBUSH, A. G., Institute of Electrochemistry AN SSSR (Academy of Sciences, USSR)

"Radiation Purification of Poluted Water From Organic Contaminants"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, 8, 1973, pp 10-14

Abstract: A number of factors must be considered during an evaluation of the radiation process for water purification: the concentration and nature of the contaminants, the desired resultant purity, the nature and concentration of the products of radiation-induced oxidation, and the volume of water to be purified. The effects of dosages and temperatures, various pathways, and possible reactive species such as OH, H, H_2O^+ , and HO_2 are considered. Yields are given for various products under varying conditions. Radiation purification may be an economic way to purify dilute (less than 10^{-3} M) solutions of highly toxic compounds. The optimum conditions for the removal of organic material from aqueous solutions by the chain mechanism were determined. Recommendations were made for future studies such as the relationship of oxidation to polymerization and polycondensation; radiation treatment followed by biological purification and others.

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- 6 -

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--RADIOLYSIS OF AQUEOUS SOLUTIONS OF SOME ORGANIC SUBSTANCES -U-

AUTHOR--(04)-BRUSENTSEVA, S.A., DOLIN, P.I., SHUBIN, V.N., PRIBUSH, A.G.

COUNTRY OF INFO--USSR

SOURCE--VYS. ENERG. 1970, 4(1), 88-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RADIOLYSIS, AQUEOUS SOLUTION, PHENOL, PICRIC ACID, SULFONE,
GAMMA RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1987/1114

STEP NO--UR/0456/70/004/001/0088/0089

CIRC ACCESSION NO--AP0104512

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104512

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHENOL (I), PICRIC ACID (II),
DECANESULFONATE (III), AND P-O SUB2 NC SUB6 H SUB4 OP(S)(OET)SUB2 (IV)
IN AQ. SOLNS. SATD. WITH AIR WERE IRRADIATED BY PRIME60 CO (3 TIMES 10
PRIME15 EV CM PRIME NEGATIVE3 SEC PRIME NEGATIVE1) AT ROOM TEMP. AND THE
DECOMP. YIELDS WERE MEASURED (COMP. D., ITS CONC. TIMES 10 PRIME5 M, AND
MINUS G VALUES, GIVEN): I, 16, 3.5 PLUS OR MINUS 0.3; II, 4.3, 0.65 PLUS
OR MINUS 0.1; III, 40, 2.3 PLUS OR MINUS 0.3; IV, 20, 1.0 PLUS OR MINUS
0.1. RADIOLYSES OF AQ. 4 TIMES 10 PRIME NEGATIVE4 M III IN THE PRESENCE
OF AIR, N SUB2, N SUB2 O, OR H SUB2 O SUB2 WERE ALSO STUDIED AND PLOTS
OF YIELD VS. DOSE ARE PRESENTED.

UNCLASSIFIED

USSR

UDC: 681.3

BRUSENTOV, N. P.

"On Subtracting and Rounding off Numbers in Positional Systems of Notation With a Positive Number Base"

V sb. Vychisl. tekhn. i vopr. kibernet. (Computer Technology and Problems of Cybernetics--collection of works), vyp. 6, Leningrad, Leningrad University, 1971, pp 28-31 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V896)

[No abstract]

USSR

UDC: 681.3

BRUSENTOV, N. P. ZHOGOLEV, Ye. A.

"Structure and Operating Algorithm of a Small Computer"

V sb. Vychisl. tekhn. i vopr. kibernet. (Computer Technology and Problems of Cybernetics--collection of works), vyp. 8, Leningrad, Leningrad University, 1971, pp 34-51 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V889)

Translation: The authors give an algorithmic description of a variant of the structure and system of commands of a small automatic digital computer, the "Setun'-70", whose distinguishing features are: memory addressing by syllable, Polish inverse recording as the internal language of the machine, use of magazine organization of memory in operation of the processor, a two-level system of operations, two-level backing store memory organization, a special system of interruption. A somewhat expanded ALGOL-60 is used as the language for describing operation of the "Setun'-70" computer. A detailed analysis of the algorithm is given with semantic interpretation of its objects. V. Mikheyev.

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USSR

UDC: 681.3

BRUSENTOV, N. P.

"On the Use of Ternary Code and Three-Valued Logic in Digital Computers"

V sb. Vychisl. tekhn. i vopr. kibernet. (Computer Technology and Problems of Cybernetics--collection of works), vyp. 7, Moscow, Moscow University, 1970, pp 3-33 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V691)

Translation: Problems of the effectiveness of using three-valued logic and ternary codes in digital computers are considered in detail. It is shown that with respect to the structure and physical realization of a ternary code, the simplest is a symmetric code, i. e. it permits the use of a symmetric alphabet. Because of this, the logic is appreciably simplified and the number of necessary variants of arithmetic operations is reduced, the possibility of operating with words of different length is opened up, the structure of operational devices is appreciably simplified, the time expended on performance of operations is reduced, less severe requirements are made on signal stability and on the discriminating capacity of the signal-reproducing devices. At the same time, the traf-

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BRUSENTOV, N. P., Vychisl. tekhn. i vopr. kibernet., vyp. 1, Moscow, Moscow University, 1970, pp 3-33

fic handling capacity of channels in ternary code is 1.59 times higher than in binary.

It is noted that the most economic realization of three-valued logic is linked with the use of electromagnetic threshold elements, and that in spite of the considerable expenditures of equipment as compared with binary devices, ternary code permits simplifying the structure and economizing on the number of connections between elements, and these features under conditions of integrated circuitry may be more important than mere economy of components. The practical results of using three-valued logic on the small "Setun" computer are discussed. Bibliography of forty-two titles. V. Mikheyev.

USSR

UDC 539.375

FINKEL', V. M., BRUSENTOV, Yu. A., JURAVIN, G. B., DOBKEVICH, V. A.,
Tambov

"Dynamic Method of Crack Inhibition"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 57-60.

Abstract: A new electron logic device is described, allowing the beginning of rupture, its direction and rate to be determined for purposes of timely switching of a barrier (explosive charge). The experiments performed indicate the possibility of changing the mode of motion of a crack and even of stopping it.

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USSR

UDC 620.193.4:669.295

TSINMAN, A. I., PISCHIK, L. M., BRUSENTOVA, V. M., ZAKHARENKOVA, L. Ye.

"Influence of Water and Oxidizers on Electrochemical and Corrosion Behavior of Titanium in Acetic-Acid Media"

Moscow, Zashchita Metallov, No 5, Sep-Oct, 1972, pp 567-569.

Abstract: Studies of the corrosion of titanium in aqueous solutions of acetic acid were performed using type VT-1 titanium. Titanium is not passivated in water-free acetic-acid solutions. The corrosion rates in 1 n. acetic-acid solutions of sodium acetate, determined by extrapolation of the linear sectors of the anode and cathode curves, indicate that titanium has good corrosion resistance in water-free acetic-acid solutions when no oxidizers are present, even at the boiling point. When the water content is over 0.02% in boiling acetic-acid solutions, titanium can be passivated. In the presence of water, titanium is spontaneously passivated in deactivated acetic-acid solutions. Addition of oxidizers to boiling solutions containing less than 0.1% water may shift the potential of titanium to the area of anode activation of the surface. With high water concentrations, titanium is stable in acetic-acid solutions both with and without oxidizers.

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- 51 -

Acc. Nr.:

AP0046763

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Ref. Code: UR0125

USSR

UDC 621.791.756:669.15-194

KAKHOVSKIY, N. I., FARTUSHIYY, V. G., DEM'YANENKO, G. P., ZAKHAROV, I. S.,
LIPODAYEV, V. N., KAKHOVSKIY, YU. N., BRUSENTOVA, V. M., KOTOV, V. V.

"Welding of Chrome-nickel-molybdenum Single-Phase Austenitic Steel"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 39-43
(from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: This article contains a study of the effect of manganese and nitrogen on crack resistance of purely austenitic welds. Chrome-nickel-manganese-molybdenum wire with nitrogen EP690 and ANV-17 electrodes for welding OKh17N16M2T, OKh17N16M3B and OKh16N15M3 steels have been developed. These developments insure uniform strength, uniform corrosion resistance of the joints made of these steels and sufficiently high plasticity and viscosity of the weld metal. There are 4 tables, 1 illustration and a bibliography with 15 entries..

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Reel/Frame
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USSR

YUNUSOV, Z. R., Candidate of Medical Sciences, BRUSILOV, G. I. and YAKOVENKO, V. I., Chair of Normal Physiology, and Electrophysiology Division, Central Scientific Research Laboratory, Tashkent Medical Institute

"Venous Tone of the Lower Extremities and Methods of Determining It"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 70, pp 18-20

Abstract: A method is described for determining venous tone from orthostatic distensibility of the veins. The results obtained using this method are very close of those obtained on the basis of changes in the Mr and Mn indices of arterial pressure in Hellong's orthostatic test. A special cuff is applied to the thigh of the recumbent subject. The cuff is connected through a tee to a manometer and tank with compressed air. When the cock is opened, air is quickly forced into the cuff, creating a pressure of 300 to 350 mm Hg. The subject then assumes a vertical position and lowers one leg into a special vessel filled with water, up to the top third of the leg. The initial volume of the leg to the top third is determined from the amount of water flowing out into a measuring cylinder. The pressure in the cuff is then reduced to zero. The increase in the hydrostatic pressure of the column of blood causes the

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USSR

YUNUSOV, Z. R., et al., Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 70, pp 18-20

veins to dilate, increasing the volume of the extremity. The ratio of the displaced volume of water to the initial amount (%) is equivalent to the orthostatic distensibility of the veins and serves as an inverse indicator of their tone.

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ON IMMUNE ALLERGIC REACTIONS OF PATIENTS WITH MYCOSES DUE TO
TRICHOPHYTON RUBRUM AND TO SOME ZOOPHILIC FUNGI -U-
AUTHOR--BRUSILOVSKAYA, O.A.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 47-51

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FUNGUS, ALLERGIC DISEASE, BLOOD SERUM, MYCOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0725

STEP NO--UK/0206/70/000/003/0047/0051

CIRC ACCESSION NO--AP0108931

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108931

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALLERGY AND AUTOIMMUNE PROCESSES WERE FOUND IN PATIENTS WITH ONYCHOMYCOSIS CAUSED BY TR. RUBRUM AND WITH MYCOSES CAUSED BY TR. GYPSEUM AND TR. FAVIFORME. SKIN TESTS WITH SPECIFIC ALLERGENS, DETERMINATIONS OF HISTAMINOPEPTIC PROPERTIES OF THE BLOOD SERUM, COOMBS TEST, BOYDEN'S TEST WITH SKIN ANTIGENS AND COMPLEMENT FIXATION TEST IN THE COLD WITH SKIN ANTIGENS WERE USED. THE DATA OBTAINED IN THE PATIENTS WERE CONFIRMED IN EXPERIMENTS ON ANIMALS WITH EXPERIMENTAL MYCOSES CAUSED BY TR. GYPSEUM AND ONYCHOMYCOSIS CAUSED BY TR. RUBRUM.

UNCLASSIFIED

USSR

UDC 539.3

BRUSILOVSKAYA, G. A. and YERSHOV, L. V. (Moscow)

"The Stress-Deformed State of a Finite Cylinder That Is Being Subjected to the Action of Dynamic Loads"

Moscow, Prikladnaya Matematika i Mekhanika, No 4, 1973, pp 724-730

Abstract: A solution is presented for a dynamic axisymmetric problem of the theory of elasticity for a cylinder of arbitrary length with given displacements on its curvilinear and plane surfaces. By means of the introduction of some auxiliary functions, the initial nonself-conjugate equations are transformed into equivalent first-order equations for an expanded eigenvector. By means of these eigenvectors, the arbitrary displacements given on the flat end of the cylinder are expanded into series in accordance with the eigensolutions of the problem. Finite formulas are obtained for the coefficients of this expansion. As a particular case, the solution of the statics of the cylinder proceeds from $\omega \rightarrow 0$. 5 references.

1/1

- 78 -

USSR

UDC 534.131.2

BRUSILOVSKIY, A. D. and SHMAKOV, V. P. (Moscow)

"Forced Oscillations of Elastic Shells of Revolution, Filled With a Liquid"

Kiev, Prikladnaya Mekhanika, Vol 9, No 3, Mar 73, pp 68-75

Abstract: A numerical method is proposed for calculating the stabilized forced oscillations of an elastic shell of revolution, filled with an ideal incompressible fluid, under the action of a polyharmonic load. The dispersion of energy within the material of the shell is taken into account. The idea of the method is based upon an approximate solution of the hydrodynamic problem and numerical integration of the equations of shell theory by the Kutta-Merson method with orthogonalization of the solution according to Gram-Schmidt. The frequency characteristics of a cylindrical shell with the fluid, obtained on an electronic computer, are presented as an illustration of practical realization of the algorithm. 5 figures. 9 references.

1/1

- 26 -

USSR

UDC: 539.3:534.1

SHVEYKO, Yu. Yu., BRUSILOVSKIY, A. D.

"On the Natural Oscillations of Cylindrical Shells Reinforced by Transverse Stiffening Ribs"

V sb. Raschety na prochnost'. Vyp. 15 (Strength Calculations--collection of works. No 15), Moscow, "Mashinostroyeniye", 1971, pp 312-327 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V201)

Translation: The paper presents some results of a study of the natural oscillations of cylindrical shells reinforced by transverse stiffening ribs. Bending, stretching and twisting of discrete ribs arranged eccentrically relative to the middle surface of the shell are taken into account as well as all components of forces of inertia of the shell and ribs. The number, rigidity and location of the stiffening ribs were varied. It is shown that applicability of the theory of structurally orthotropic shells to the given problem is limited. It is also shown how the natural frequencies of unreinforced shells are affected by the fastening of their end faces (including elastic connections). The exact solution of equations of oscillations of the shell in displacements is used in solving the problem. The frequency equation for the reinforced shell is derived by a special matrix method. Authors' abstract.

1/1

- 106 -

USSR

UDC 669.295:539.292

ODINOKOVA, L. P., and BRUSILOVSKIY, B. A., Kramatorsk Industrial Institute

"The Beta-Phase Decay on Continuous Cooling in Titanium-Iron Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 713-718

Abstract: The beta-phase decay in Ti-Fe alloys, depending on the Fe-content (0.1-9.0%) and the cooling rate, was investigated by metallographic and roentgenostructural analyses and the variation of hardness. Roentgenograms were taken from specimens 0.8-1.0 mm in diameter, cut from heat-treated bars. Investigation results show the effect of heat treatment and the hardness HV, the phase composition, and the lattice parameter of beta-phase depending on Fe content. A mechanism of ω -phase development by direct beta-phase decay during continuous cooling is suggested and discussed. The development of the ω -phase in alloys with a near critical Fe-content (6% Fe) is indicated. Generalized investigation results, presented in diagrams of the anisometric beta-phase decay, show that in the alloy with 1% Fe the temperature interval of phase transformations shifts into the region of lower temperatures by increasing cooling rate. In the alloy with 9% Fe, only the diffusion

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USSR

ODINOKOVA, L. P., and BRUSILOVSKIY, B. A., Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 713-718

beta-phase decay region with development of Tife and an alpha-phase by annealing is to be observed. The beta-phase supercools up to room temperature by normalization and hardening. Two figures, two tables, five bibliographic references.

2/2

- 41 -

Nickel

USSR

UDC 669.245.018.44(088.8)

PANASYUK, I. O., BRUSILOVSKIY, B. S., VILKOV, V. I., VORONIN, G. M., YEGOROV, YE. YE., YELKIN, I. S., KLIMOV, L. YA., KOVROVA, YE. A., KONTSEVAYA, YE. M., LYUBINSKAYA, M. A., MILENINA, YE. G., MIKHAYLOV, I. A., RAZUVAYEV, YE. I., SIROTKIN, A. I., SOLDATCHENKO, V. A., SPILITSIN, R. I., SHAPIRO, S. M.

"Nickel-Chromium Base Alloy"

USSR Author's Certificate No 276418, Filed 2 Jun 69, Published 16 Oct 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I766P)

Translation: The heat-resistant alloy has the following composition (in %): C 0.03-0.1, Cr 30-40, W 3-5.5, Mo 2-4, Ti 0.5-1.5, Al 0.5-1.5, Nb 0.5-1.5, Ce 0.01-0.3, B 0.003-0.008, Ni, the rest. The alloy has increased heat resistance and also the following mechanical and physical-chemical properties at 1,100°: σ_B 8 kg/mm², δ 65%, σ stress-rupture 1 kg/mm², coefficient of linear expansion $15 \cdot 10^{-6}$ deg⁻¹, increase in weight after 100 hours of heating at 1,200° in the air 0.6 g/m². It is corrosion-resistant in a moist atmosphere under tropical conditions, in sea water, and in the products of combustion of highly sulfurous fuel.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE ENZYMATIC EXCRETORY FUNCTION OF THE SMALL INTESTINE IN PERSONS
WITH SUSTAINED COLECTOMY -U-
AUTHOR-(03)-BRUSILOVSKIY, M.I., KONSISTORUM, A.V., MARKO, O.P.
CCOUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 95-99
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME, SECRETION, SMALL INTESTINE, PHOSPHATASE, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1781

STEP NO--UR/0497/70/048/006/0095/0099

CIRC ACCESSION NO--AP0129149

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129149

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE CONTAINS DATA CONCERNED WITH THE CONTENT OF ENTEROKINASE AND ALKALINE PHOSPHATASE IN THE DUODENAL JUICE AND FECES IN 35 PERSONS WHO HAVE SUSTAINED COLECTOMY IN THE PAST. THE AUTHORS DEMONSTRATE THE RELATION BETWEEN THE CONTENT OF ENZYMES IN THE REFERRED TO MEDIA ON THE ONE HAND, AND THE QUANTITY AND QUALITY OF THE INTESTINAL MICROFLORA AND MOTORICITY OF THE SMALL INTESTINE, ON THE OTHER HAND. IT IS SHOWN THAT IN PATIENTS WHO HAVE SUSTAINED COLECTOMY THE FORMATION OF ALKALINE PHOSPHATASE AND ENTEROKINASE IN THE SMALL INTESTINE DECREASES, AND THERE OCCURS AN AUGMENTED EXCRETION IN MOST OF THEM OF ENTEROKINASE WITH THE FECES AND IN SOME, OF ALKALINE PHOSPHATASE. FACILITY:
NAUCHNO-ISSLEDOVATEL'SKAYA LABORATORIYA PROKTOLOGII MZ RSFSR, MOSKVA.

UNCLASSIFIED

Antennas

USSR

UDC: 538.56:621.396.67

BOGDANOV, A. A., BRUSIN, I. Ya., and SKVORTSOV, V. D.

"Effect of Photofilm Noise in Optical Processing Systems for the Signals of Synthesizable Aperture Antennas"

Gor'kiy, Izvestiya VUZ--Radiofizika, Vol. 14, No. 1, 1971, pp 114-126

Abstract: Photographic film is used for recording purposes in antennas with synthesized apertures. In ordinary photography, the noise characteristics of this film is unimportant; in antennas of this type, however, they are extremely important since they can spoil the information capability of the system. This article shows that the film noise imposes limits on the antenna's dynamic range and on the number of discernible levels of signal intensity, leading also to a loss in resolving power. The authors also describe a method for measuring the noise parameters, and obtain quantitative results for film type Mikrat-300. In the development of

1/2

USSR

BOGDANOV, A. A., et al., Izvestiya VUZ--Radiofizika, Vol 14, No 1, 1971, pp 114-126

their analysis, the authors refer to an earlier paper (Cutrona, L. J., et al, Proc. IEEE, 54, No 8, 1966) in which this type of antenna is described. Using a formula for the transparency of the ideal film given in that paper, the authors describe an experimental system for determining the factors in that formula.

2/2

- 5 -

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CERTAIN RESULTS OF INVESTIGATION OF DISCRETE STOCHASTIC SYSTEMS OF
CONTROL -U-

AUTHOR--BRUSIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 6, PP 82-87

DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--NONLINEAR AUTOMATIC CONTROL SYSTEM, STOCHASTIC PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1013

STEP NO--UR/0103/70/000/006/0082/0087

CIRC ACCESSION NO--AP0124672

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124672

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CLASS OF NONLINEAR DISCRETE STOCHASTIC SYSTEMS OF CONTROL IS INVESTIGATED. A NEW OUTPUT PROCESS ESTIMATION FOR THE CASE WHEN THE INPUT PROCESS IS ERGODIC HAS BEEN OBTAINED.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--COMPARATIVE ASSESSMENT OF IMMUNOLOGICAL EFFICACY OF AKDC VACCINES
WITH VARIOUS QUANTITATIVE CONTENT OF COMPONENTS IN PRIMARY IMMUNIZATION
AUTHOR--(U.S.)-KHEYFETS, L.B., SALMIN, L.V., SEGAL, L.S., BRUSINA, L.I.,
GURDZIANTS, E.M. *B*
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR
4, PP 134-140
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IMMUNIZATION, VACCINE, TETANUS TOXOID, DIPHTHERIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1990/1485

STEP NO--UR/0016/70/000/004/0134/0140

CIRC ACCESSION NO--AP0109545

UNCLASSIFIED

2/2 024
CIRC ACCESSION NO--AP0109545

UNCLASSIFIED

PROCESSING DATE--020CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CARRIED OUT A STRICTLY CONTROLLED FIELD TRIAL ON COMPARISON OF THREE VARIETIES OF AKDC VACCINE, DIFFERING BY CONTENT OF THE VACCINAL DOSE OF DIPHTHERIA, TETANUS AND PERTUSSIS COMPONENTS. BLOOD SERA OBTAINED BEFORE THE IMMUNIZATION AND AFTER EACH OF THE THREE INJECTIONS OF THE PREPARATION WERE EXAMINED; THE LAST SAMPLE WAS TAKEN IN 1.5-2.5 MONTHS AFTER THE THIRD INJECTION. AS DEMONSTRATED, REDUCED DOSES OF TETANUS TOXOID (EITHER ITS DIMINISHED CONTENT IN THE VACCINE FROM 5 TO 2.5 BU, OR ITS INCLUSION INTO THE ASSOCIATED PREPARATION ONLY IN 2 INJECTIONS, FOR EXAMPLE IN THE 2ND AND 3RD, THE THIRD INJECTION CONTAINING NO TOXOID) WERE JUSTIFIED. ANALOGOUS CHANGES COULD ALSO BE MADE IN RESPECT TO DIPHTHERIA TOXOID, BUT IN THE LATTER CASE A STUDY OF THE TITRES AT THE MORE REMOTE PERIODS AFTER THE IMMUNIZATION ARE REQUIRED. IT IS OF EXPEDIENCE TO INCREASE THE CONTENT OF PERTUSSIS COMPONENT IN AKDC VACCINE FROM 10 TO 5 MILLIARD MICROBIAL CELLS PER DOSE.

UNCLASSIFIED

USSR

UDC 616.71-089.843-07:616.155.32-008

BRUSKINA, V. Ya., Laboratory of Genetics and General Clinical Studies, Central Institute of Traumatology and Orthopedics

"Lymphocytic Reaction After Bone Homotransplantation"

Moscow, Laboratornoye Delo, No 8, 1970, pp 470-473

Abstract: Lymphocytes were studied in blood smears from 57 adults and children who had received bone grafts. Lymphocytograms showed that the number of small lymphocytes began to increase 1 to 2-1/2 months after the operation and remained well above the control value for 3 years or more. The increase was greatest in six patients in whom a joint graft was resorbed (apparently due to sensitization). The number of large lymphocytes increased immediately after the operation, especially in the case of six patients in whom suppuration of the graft was subsequently noted (1 to 5 months after surgery). The number of lymphocytes with polymorphic nuclei and azurophilic granules increased on the first day of the postoperative period and remained at a high level in both adults and children for about 3 years. By showing the reaction of the lymphocytic system to bone transplantation, lymphocytograms serve as a useful aid in predicting the fate of a graft in the recipient.

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USSR

UDC 547.896

BRUTANE, D. V., and STRAKOV, A. YA., Riga Polytechnical Institute,
Riga, Latvian Sovnarkhoz
"2-phenyl-4-methyl-5-oxo-5,6,7,8-tetrahydroquinazolines"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya,
No 2, 1970, pp 202-205

Abstract: Transamination of 2-(α -phenylamino)-ethylidenecyclohexanedi-
one, 1,3,2-(α -phenylamino)-ethylidene-5,5-dimethyl-, -5-phenyl-,
and -5-(α -furyl)-cyclohexanediones-1,3 with benzoamidines carried out
by refluxing the components in absolute ethanol for 5-10 hrs in the pre-
sence of piperidine gave a 50-70% yield of 2-phenyl-4-methyl-5-oxo-
5,6,7,8-tetrahydroquinazoline, 2-phenyl-4-methyl-5-oxo-7,7-dimethyl-,
-7-phenyl-, and -7-(α -furyl)-5,6,7,8-tetrahydroquinazolines, respect-
ively. The same quinazolines were synthesized from corresponding
5-substituted 2-acetylcyclohexanediones-1,3 and benzamidine. Reacting
acetamidine or formamidine with 2-acetylcyclohexanediones-1,3 gives
2-(α -aminoethylidene)-cyclohexanediones-1,3.

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USSR

UDC 547.856

STRAKOV, A. YA., BRUTANE, D. V., and LEYCH, V. D., Riga Polytechnical Institute, Riga, Latvian Sovnarkhoz

"2-Phenyl-7,7-dimethyl- and 2,7-Diphenyl-4-phenylamino-5-oxo-5,6,7,8-tetrahydroquinazolines"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, No 2, 1970, pp 248-249

Abstract: Reaction of 5,5-dimethyl- (I), and 5-phenylcyclohexanedione-1,3-thiocarboxylic acid (II) with benzamidine in boiling absolute ethanol gave, respectively 3-(N-benzamidynyl)-5,5-dimethyl- (m.p. 174°C) and 3-(N-benzamidynyl)-5-phenylcyclohexen-2-one-1-thiocarboxylic-2 acid, m.p. 180-184°C (decomposition). Refluxing the above compounds for 12 hrs in dry dioxane containing a trace of orthophosphoric acid gave their tetrahydroquinazoline derivatives melting, respectively, at 137-139 and 203-207°C (decomposition).

1/1

USSR

UDC: 51

BRUTIN, Kh. K.

"Automatic Search for Strategies in Certain Games by Heuristic Methods"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works),
vyp. 24, Moscow, "Nauka", 1971, pp 73-90 (from RZh-Kibernetika, No 5, May
72, Abstract No 5V389)

Translation: The article deals with multiple-step finite two-person games
with complete information and zero sum. Methods are proposed for finding
deterministic strategies in such games in an automatic way. Author's ab-
stract.

1/1

USSR

UDC: 615.45:615.783.1

CHICHIRO, V. Ye., SURANOVA, A. V., BRUTKO, L. I., DROZHZHINA, V. V., Central
Pharmaceutical Scientific Research Institute

"A Method of Synthesizing the Morphine Base"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 15, May 71, Author's Certificate No 302342, Division C, filed 27 Mar 70,
published 28 Apr 71, p 80

Translation: This Author's Certificate introduces a method of synthesizing the
morphine base from morphine hydrochloride by portion between a phosphate
buffer solution and chloroform. As a distinguishing feature of the patent,
the quality of the produce is improved by using a phosphate buffer solution
with pH of 6.5-7.0

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- 87 -

USSR

UDC: 8.74

MKRTCHYAN, L. V., BRUTYAN, Kh. K.

"An Algorithm for Sorting Data Blocks Stored in the External Memory of a Computer"

Sb. tr. Tsentr. n.-i. lab. avtomatizir. sistem upr. nar. kh-vom (Collected Works of the Central Scientific Research Laboratory of Automated Systems for Management of the National Economy), 1970, vyp. 1, pp 42-48 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V542)

[no abstract]

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USSR

BRUTYAN, Kh. K.

"Automatic Search for Strategies in Certain Games by Heuristic Methods"

Sb. tr. Tsent. N.-i. lab. Avtomatizir. Sistem upr. nar. kh-vom [Collected Works of Central Scientific Research Laboratory for Automation of Control Systems for the National Economy], No 1, 1970, pp 5-31, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V389, unsigned).

Translation: Multistep finite games with full information are studied. A number of methods are suggested for automatic determination of winning strategies.

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USSR

BRUTYAN, Kh. K., POGOSYAN, E. M.

"Some Properties of the Search for a Reduced Description of Sets"

Sb. tr. Tsentr. N.-i. lab. Avtomatizip. Sistem upr. nar. kh-vom [Collected Works of Central Scientific Laboratory for Automation of Control Systems of the National Economy], No 1, 1971, pp 32-41 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V391).

NO ABSTRACT.

1/1

- 6 -

USSR

VARTANYAN, R. A., BRUTYAN, V. K.

"One Mathematical Model of the Distribution of Production Programs Among Dependent Objects"

Sb. tr. Tsentr. N.-i. lab. Avtomatizir. Sistem upr. nar. Kh-vom [Collected Works of Central Scientific Laboratory for Automation of Systems of Control of the National Economy], No 1, 1971, pp 49-62, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V607 unsigned).

Translation: An analysis in the spirit of the theory of controllable Markov processes.

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USSR

UDC 547.442 + 547.791

BRIVELLE, N. P., and GUDRINIYETSE, E. YU., Riga Polytechnical Institute, Riga, Latvian Sovnarkhoz
"Azidodicarbonyl Compounds. I. Reaction of 2-Azido-2-phenylindandione-1,3 With Propiolic Acid"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, No 2, 1970, pp 198-201

Abstract: 2-Azido-2-phenylindandione-1,3 adds to the triple bond of propiolic acid to give 2-(4'-carboxy-1',2',3'-triazolyl-1')-2-phenylindandione-1,3 (I), m.p. 176°. Analogously 2-p-methoxyphenyl- and 2-p-chlorophenyl- analogues of (I) are obtained, melting at 145-145° and 174°, respectively; all compounds melt with decomposition. Decarboxylation of (I) yields 2-(1',2',3'-triazolyl-1')-2-phenylindandione-1,3, m.p. 181°, which is hydrolyzed either to the ω -phenyl- ω -(1',2',3'-triazolyl-1')-acetophenone-o-carboxylic acid, m.p. 195° (decomposing) or 1-benzyl-1,2,3-triazole, depending on the concentration of the NaOH used.

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1/2 018 UNCLASSIFIED PROCESSING DATE--020070
TITLE--THE EXTRACTION OF USEFUL MINERALS FROM THE BOTTOM OF SEAS AND
OCEANS -U-
AUTHOR--(05)--MUROK, G.A., KOSTIN, V.N., TRUYAKIN, YU.V., LUBIS, YU.V.,
MOLOCHNIKOV, L.N.
COUNTRY OF INFO--USSR
SOURCE--(DOBRYCHAPOLEZNYKH ISKOPAYEMYKH SO DNA MOREY I OKEANOV) MOSCOW,
NEBRA, 1970, 238 PP
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--GOLD, TIN, TITANIUM, DIAMOND, MINERAL, OCEAN BOTTOM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1993/1993

STEP NO--UR/0000/70/000/000/0001/0235

CIRC ACCESSION NO--AM0114384

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AM0114334

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION
3. CHAPTER I USEFUL MINERALS OF SEAS AND OCEANS 8. CHAPTER II
PROSPECTING AND SAMPLING UNDERWATER ALLUVIAL DEPOSITS 40. CHAPTER III
THE TECHNOLOGY OF UNDERWATER EXPLOITATION OF DEPOSITS OF USEFUL
MINERALS FROM THE BOTTOM OF SEAS AND OCEANS 71. CHAPTER IV TECHNICAL
MEANS FOR THE EXTRACTION OF USEFUL MINERALS FROM THE BOTTOM OF SEAS AND
OCEANS 142. CHAPTER V ENRICHMENT OF SEA SANDS OF USEFUL MINERALS 205.
CHAPTER VI TASKS AND WAYS TO SOLVE THE PROBLEM OF UNDERWATER EXTRACTION
OF USEFUL MINERALS IN THE USSR 233. LITERATURE 237. GIVEN ARE: A
GEOLOGICAL CHARACTERISTIC OF SEA ALLUVIAL DEPOSITS, METHODS OF
PROSPECTING AND SAMPLING THESE DEPOSITS; INFORMATION IS GIVEN ON THEIR
PRESENCE IN SEAS AND OCEANS AND THE RECOVERABILITY AFTER CONDUCTING
EXPLOITATION WORK. CITED ARE DATA ON THE TECHNOLOGY OF UNDERWATER
EXTRACTION OF GOLD, TIN, TITANIUM CONTAINING AND MAGNETITE SANDS,
DIAMONDS AND OTHER USEFUL MINERALS. GIVEN ARE ECONOMIC RESULTS OF
UNDERWATER EXTRACTION AND METHODS TO DETERMINE THE ECONOMIC
EFFECTIVENESS AND ALSO THE DIRECTION OF THE DEVELOPMENT OF THIS
TECHNOLOGY.

UNCLASSIFIED

Oncology

USSR

UDC 616-006-092.9-022.6:576.858.5SA7(C8)

BRUYAKO, E. T., POGOSYANTS, YE. YE., and LA'TSHEYN, A. D., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, and Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Induction of Tumors in Striped Hairy-Footed Hamsters With Simian Adenovirus SA7(C8)"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 71, pp 679-681

Abstract: The small rodent *Phodopus sungorus campbelli* Th. was chosen for oncological studies because it has a relatively small number of easily identified chromosomes ($2n=28$), often develops spontaneous tumors, and is susceptible to carcinogenic chemicals. About 65% of the hamsters, inoculated within 24 hours of birth with 0.1 ml of simian adenovirus SA7 solution containing $10^{5.3}$ or $10^{6.2}$ BDU and under the skin of the back, developed sarcomas at the site of inoculation in 30-60 days. The sarcomas consisted of tightly packed spindle-shaped cells with little intercellular substance and little infiltration of the underlying tissues. The tumors grew at a rapid rate, and some became as large as the animals. Eighteen of the 24 hamsters which were not sacrificed for histological tests died within 16 days after the tumors were detected. No metastasis into internal organs was observed.

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SEMICOKING OF LIGNITE FROM THE KANSK ACHINSK BASIN IN SHAFT BED
FURNACES -U-
AUTHOR-(02)-BRUYER, G.G., ZHUKOV, N.A.
COUNTRY OF INFO--USSR
SOURCE--KOKS KHIM. 1970, (5), 28-31
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS
TOPIC TAGS--COKE, FERROALLOY, COAL, METAL REDUCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0075 STEP NO--UR/0068/70/000/005/0028/0031
CIRC ACCESSION NO--AP0132368
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132368

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEMICOKE CONTG. 20-7PERCENT H SUB2 O, 12-17PERCENT ASH, AND 8-12PERCENT VOLATILES, HAVING A HEAT OF COMBUSTION OF 6200-400 KCAL-KG, AND SUITABLE FOR USE AS A REDUCING AGENT IN FERROALLOY AND OTHER ELECTROTHERMAL PROCESSES BECAUSE OF ITS HIGH RESISTIVITY (3.3 TIMES 10 PRIME3 OHM-MM PRIME2 M) AND REACTIVITY (12.9 ML-G-SEC), WAS PRODUCED IN 33.7PERCENT YIELD AT A RATE OF 35-45 TONS-DAY (SIMILAR TO 50PERCENT OF THE RATE OF COAL) FROM LIGNITE CONTG. 20-4PERCENT H SUB2 O, 8-12PERCENT ASH, 43-4PERCENT VOLATILES, AND 0.3-0.4PERCENT S WHEN THE LIGNITE CHARGE WAS REDUCED TO A HEIGHT SMALLER THAN OR EQUAL TO 1.5 M ABOVE THE BLAST ZONE IN A DOUBLE SHAFT FURNACE AND THE SEMICOKE WAS REMOVED ALMOST CONTINUOUSLY AND WAS COOLED ADDNL. BY ADDED WATER IN THE WORM CONVEYER. REDUCED PERMEABILITY IN THE CHARGE RAISED GAS PRESSURES SIMILAR TO 250PERCENT, BUT THE INCREASED CONSUMPTION OF HEAT EXCHANGER (800-1000 M PRIME3 TON LIGNITE AT 725-800DEGREES) WAS COMPENSATED BY HIGHER GAS YIELDS.

UNCLASSIFIED

USSR

UDC 541.183:661.183.6

MISHIN, I. V., KLYACHKO-GURVICH, A. L., BRUYEVA, T. R., and RUBINShteIN, A. M.,
Institute of Organic Chemistry Imeni N. D. Zelinskii, Acad. Sc. USSR

"The Technique for Improving the Adsorption Capacity of the Sodium Form of
Mordenite."

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72,
p 2370

Abstract: Treatment of the starting plant preparation of the mordenite (I) with
2N HCl produces the H-form (II), which can be recationized to the original
composition (III). It was shown that (III) has adsorption capacity approaching
that of (II) -- identical with the "wide-porous" NaM described in literature.
Initial heats of adsorption of benzene for (I) and (III) are similar, those of
(II) being lower.

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USSR

UDC: 621.396.621

BRUYEVICH, A. N., Active Member of the Scientific and Technical Society of Radio
~~Engineering, Electronics and Communications~~ imeni A. S. Popov

"Investigation of a Narrow-Band Frequency Converter in the High-Amplitude Mode"

Moscow, Radiotekhnika, Vol. 26, No 6, Jun 71, pp 74-81

Abstract: The author calculates a narrow-band frequency converter based on triodes and diodes in the high-amplitude mode. Conversion losses are found as a function of signal power and the resonance impedances of the tank circuits.

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- 3 -

1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INTERNAL PARAMETERS OF MIXER IN THE LARGE AMPLITUDE REGIME -U
AUTHOR--BRUYEVICH, N.N. *B*
COUNTRY OF INFO--USSR
SOURCE--RADIOTEKHNIKA, VOL. 25, APR. 1970, P. 75-82
DATE PUBLISHED----APR70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION
TOPIC TAGS--CIRCUIT PARAMETER, PULSE AMPLITUDE, RADIO SIGNAL EFFECT,
ELECTRIC IMPEDANCE, SIGNAL ANALYSIS, FREQUENCY CONVERSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0307 STEP NO--UR/0108/70/025/000/0075/0082
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C24

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134111

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONTRIBUTION TO THE LARGE SIGNAL FREQUENCY CONVERSION THEORY OF HETERODYNE CONVERSION TRANSDUCER WHOSE NONLINEAR ELEMENT IS CHARACTERIZED BY FOUR INTERNAL PARAMETERS: THE (TWO WAY) CONVERSION TRANSGONDUCTANCES AND THE CORRESPONDING INTERNAL IMPEDANCES. IN THE CASE OF LARGE SIGNALS, THESE PARAMETERS DEPEND NOT ONLY ON THE HETERODYNE AMPLITUDE (AS IN THE CASE OF SMALL SIGNALS) BUT ALSO THE SIGNAL AMPLITUDE AND THE INTERMEDIATE VOLTAGE. EXPRESSIONS FOR THE LARGE SIGNAL INTERNAL PARAMETERS OF THE HETERODYNE CONVERSION TRANSDUCER ARE DERIVED.

UNCLASSIFIED

USSR

UDC 621.374.4

BRUYEVICH, A. N. B

Umnozhiteli chastoty (Frequency Multipliers), Moscow, Soviet Radio Press, 1970, 247 pp (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D4K)

Translation: This article contains an investigation of the problems of calculating frequency multipliers made of tubes, transistors, nonlinear transistors and varactors. On the basis of analysis of the energy relations in the multiplier cascade, the problems of matching the cascades between each other are investigated, and the maximum effectiveness of the cascade is determined. Methods are presented for calculating the level of side harmonics. Fluctuations in multichannel frequency multipliers are investigated. The magnitude of the "natural" and technical fluctuations is estimated. Recommendations are presented with respect to planning and designing stable multipliers. There are 61 illustrations and a 58-entry bibliography.

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1/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--SOLUBILITY DIAGRAM FOR A NA SUB2 H SUB2 Y DISODIUM SALT OF
EDTA-KOH-H SUB2 O TERNARY SYSTEM AT 25DEGREES -U-

AUTHOR-(03)-MERKULOVA, K.S., DOMBROVSKAYA, N.S., BRUYLE, YE.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 881-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, METAL COMPLEX COMPOUND, SODIUM COMPOUND, POTASSIUM
COMPOUND, HYDROXIDE, YTTRIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3004/2017

STEP NO--UR/0080/70/043/004/0881/0885

CIRC ACCESSION NO--AP0132278

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132278

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. CURVE OF THE TERNARY SYSTEM CONSISTED OF 2 BRANCHES. OF THESE THE 1ST CORRESPONDED TO THE CRYSTN. OF ANHYD. NA SUB2 H SUB2 Y. THE 2ND BRANCH OF THE CURVE APPEARED WITH AN INCREASE IN THE KOH CONTENT AND CORRESPONDED TO THE CRYSTN. OF 2KOH.NA SUB2 H SUB2 Y. THIS SOLID PHASE CONTAINED KOH 25 AND NA SUB2 H SUB2 Y 75 WT. PERCENT. A THERMOGRAPHIC ANAL. OF THE SALT NA SUB2 H SUB2 Y.2H SUB2 O HAD ENDOTHERMIC EFFECTS AT 104, 192, AND 243DEGREES. THE 1ST 2 WERE CAUSED BY THE LOSS OF 2 MOLS. OF H SUB2 O AND AT 243DEGREES THE COMPD. BEGINS TO DECOMP. THE DTA CURVE OF ANHYD. NA SUB2 H SUB2 Y SHOWED ENDOTHERMIC PEAKS AT 81 AND 198.6DEGREES AND AT 350DEGREES THE COMPD. BEGINS TO DECOMP. THE DTA CURVE FOR 2KOH.NA SUB2 H SUB2 Y IS VERY COMPLEX AND IS AS YET NOT NOT RESOLVED.

UNCLASSIFIED

USSR

UDC: 8.74

BRYABIN, V. M., YUFA, V. M.

"Design of Syntax Analyzers for Conversational Systems"

Zh. vychisl. mat. i mat. fiz., 1973, 13, No 1, pp 172-186 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V621 by the authors)

Translation: A method of describing the grammar of a natural language is considered as well as a scheme for converting the grammar into a syntax analyzer for a specific computer. The formal syntax and semantics of the metalanguage are presented. An intermediate language is proposed which describes the flowchart of the translator for the conversational system. The metadescription is transformed to the translator body for the specific computer in two stages by special programs in LISP language with the use of macro-operators in the assembler language.

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USSR

UDC 8.74

BRYABRIN, V. M.

"AKT Automated Translator Construction Systems"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alusta, 1972, pp 162-172 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V463)

Translation: An automated translator construction system (AKT) is described which is oriented toward conversational languages. When creating the AKT system, the following basic properties of the conversational languages were considered: 1) the sentence length of the conversational language is, as a rule, limited; 2) the descriptions of the types of variables or files are not given; 3) the conversational language operators have usually a simple linear structure, that is, there are no "imbedded" operators; 4) each operator begins with a key word (the name of the operator) permitting adjustment of the syntactic analyzer to the defined branch of the syntactic analysis. A brief description of the metalanguage designed to give the grammars of the constructed languages is presented. A study is made of the procedure for making the transition from the syntactic analysis to the semantic procedure call.

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- 72 -